National Transportation Safety Board
Washington, DC 20594

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Brief of Accident

Adopted 02/26/2007

LAX05LA288
File No. 20981 | 09/03/2005 | Trona, CA | Aircraft Reg No. N912TT | Time (Local): 08:30 PDT

Make/Model:	Goodlett / Safari
Engine Make/Model:	Lycoming / O-320-B2C
Aircraft Damage:	Substantial
Number of Engines:	1
Operating Certificate(s):	None
Type of Flight Operation:	Personal
Reg. Flight Conducted Under:	Part 91: General Aviation

	Fatal	Serious	Minor/None
Crew	0	0	1
Pass	0	0	0

Last Depart. Point:	Ridgecrest, CA
Destination:	Local Flight
Airport Proximity:	Off Airport/Airstrip

Condition of Light:	Day
Weather Info Src:	Weather Observation Facility
Basic Weather:	Visual Conditions
Lowest Ceiling:	None
Visibility:	65.00 SM
Wind Dir/Speed:	360 / 004 Kts
Temperature (°C):	24
Precip/Obscuration:	No Obscuration; No Precipitation

Pilot-in-Command Age: 44

Certificate(s)/Rating(s)
Private; Single-engine Land; Helicopter

Instrument Ratings
None

Flight Time (Hours)

Total All Aircraft:	680
Last 90 Days:	12
Total Make/Model:	117
Total Instrument Time:	UnK/Nr

The experimental helicopter impacted terrain after experiencing a failure of a flight control connecting rod. According to the pilot, he was maneuvering the helicopter about 50 feet above the ground when he heard a loud bang followed by a whirring or buzzing noise. The helicopter rolled to the left, which the pilot was unable to counter with control inputs, and impacted terrain on the left side. A post-accident examination of the helicopter by the pilot/builder revealed that a 27.875-inch aluminum control rod was fractured near the middle of the rod. The control rod was connected between the collective-cyclic mixing assembly and a walking beam that connected to the stationary swash plate of the left side (pilot side) of the helicopter. The break in the control rod was perpendicular to the longitudinal axis of the rod. Examination of the control rod by a metallurgical laboratory revealed the failure was a result of a fatigue crack that had propagated through nearly 75 percent of the control rod. A portion of the break was polished indicating that the crack had been present for quite some time. The pre-existing crack in the control rod reduced its strength to a point that allowed the flight control forces to fail the remaining material. According to the pilot/builder, a break in the control rod would result in flight characteristics consistent with that experienced by the pilot during the accident flight. The control system has been redesigned by the kit manufacturer as a result of this accident and now incorporates steel control rods as opposed to aluminum ones.

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Occurrence #1: AIRFRAME/COMPONENT/SYSTEM FAILURE/MALFUNCTION
Phase of Operation: MANEUVERING

Findings
1. (C) ROTORCRAFT FLIGHT CONTROL,CYCLIC CONTROL ROD - FATIGUE
2. (C) ROTORCRAFT FLIGHT CONTROL,CYCLIC CONTROL ROD - FAILURE,TOTAL

Occurrence #2: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: MANEUVERING

Findings
3. AIRCRAFT CONTROL - NOT POSSIBLE - PILOT IN COMMAND

Occurrence #3: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: DESCENT - UNCONTROLLED

Findings
4. TERRAIN CONDITION - GROUND

Findings Legend: (C) = Cause, (F) = Factor

The National Transportation Safety Board determines the probable cause(s) of this accident as follows.
the in-flight fatigue failure of a control system connecting rod, which resulted in a loss of helicopter control.